

What is claimed is:

1. A coupling member for connecting a part, provided for receiving or dispensing fuel and made primarily of HDPE (high-density polyethylene), to a fluid line, wherein the coupling member comprises:

a first component, a second component, and a third component comprised primarily of meltable material;

wherein the third component is configured to form a heat fusion joint with the part for receiving or dispensing fuel and has an undesirably high permeability and swelling capacity relative to fuel;

wherein the third component is connected to the first component by at least one of a material bonding action and a positive-locking action;

wherein the second component has a greater blocking capacity relative to fuel than the third component and a higher strength than the third component;

wherein the material of the second component is embedded completely or mostly in the material of the third component;

wherein a volume ratio of volumes of the second and third components relative to one another is selected such that combined properties of the second and third components with regard to fuel permeability, strength, and volume

changes by swelling are approximated to properties of the second component with regard to fuel permeability, strength, and volume changes by swelling;

wherein the materials of the first and third components are heat-fusible with one another.

2. The coupling member according to claim 1, wherein the meltable material of the third component is thermoplastic material.

3. The coupling member according to claim 1, wherein the first component comprises at least one of the materials selected from the group consisting of PA, POM, PBT, PEN, PET, PBN, PPS, PPA, PP, LCP, aliphatic polyketone, and fluoro-thermoplastic material.

4. The coupling member according to claim 1, wherein the second component comprises at least one of the materials selected from the group consisting of EVOH, PBT, PEN, PET, PBN, POM, PA, PPS, PPA, LCP, aliphatic polyketone, and fluoro-thermoplastic material or at least a metal or glass.

5. The coupling member according to claim 1, wherein the third component comprises a polyolefin fusible with the material of the part for receiving or dispensing fuel.

6. The coupling member according to claim 5, wherein the polyolefin is a functionalized polyolefin.

7. The coupling member according to claim 1, wherein the shape of the second component within the third component is selected such that 20 to 100 % of the cross-section of the third component, which cross-section is permeable for fuel, are covered by the second component.

8. The coupling member according to claim 1, wherein the second and the third components are annular.

9. The coupling member according to claim 8, wherein the first component is tubular and is surrounded by the third component.

10. The coupling member according to claim 9, wherein the first component has a flange engaging across the third component.

11. The coupling member according to claim 1, forming at least one of a connecting socket, a housing of a valve, a filling socket, and a fastening flange for a fuel pump.

12. A method for manufacturing a coupling member comprising a first component, a second component, and a third component comprised primarily of meltable material; wherein the third component is configured to form a heat fusion joint with the part for receiving or dispensing fuel and has an undesirably high permeability and swelling capacity relative to fuel; wherein the third component is connected to the first component by at least one of a material bonding action and a positive-locking action; wherein the second component has a greater blocking capacity relative to fuel than the third component and a higher strength than the third component; wherein the material of the second component is embedded completely or mostly in the material of the third component; wherein a volume ratio of volumes of the second and third components relative to one another is selected such that combined properties of the second and third components with regard to fuel permeability, strength, and volume changes by swelling are approximated to properties of the second component with regard to fuel permeability, strength, and volume changes by swelling; wherein the materials of the first and third components are heat-fusible with one another; the method comprising the steps of:

injecting the material of the second component into

a still formable core of the third component;

partially embedding the third component in the material of the third component when shaping the first component.

13. The method according to claim 12, further comprising the step of selecting a processing temperature of the material of the second component to be smaller than a decomposition temperature of the material of the third component.